3-Dimensionally Printed, Native-Like Scaffolds for Myocardial Tissue Engineering.

Journal: Circ Res

Publication Year: 2017

Authors: Alexa Wnorowski, Joseph C Wu

PubMed link: 28408446

Funding Grants: Human Embryonic Stem Cell-Derived Cardiomyocytes for Patients with End Stage Heart Failure, Macaca mulatta as advanced model for predictive preclinical testing of engineered cardiac autografts and allografts

Public Summary:
Coronary heart disease (CHD) and myocardial infarction (MI) account for ≈1 in 7 deaths in the United States, with an estimated 750 000 incidences of MI in the United States each year.1 Although modern medical therapies have reduced the number of coronary heart disease–related deaths over the past 30 years, there is still much room for improvement in coronary heart disease and MI treatment. As cardiac tissue has limited regenerative capability, damaged myocardial tissue downstream of the blocked vessel in MI remodels to nonfunctional fibrotic scar tissue. Cell and tissue-engineered therapies are a promising therapeutic area that may reduce MI scar formation and induce healthy remodeling of damaged heart tissue by providing cells and matrix materials that can integrate with native tissue to restore normal heart function.

Scientific Abstract: